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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,908	11/03/2003	Stefan Raspl	DE920010103US1/IBMP026	7758
63056	7590	08/08/2007		
MOLLBORN PATENTS ATTN: IBM 2840 COLBY DRIVE BOULDER, CO 80305			EXAMINER CHEN, TE Y	
			ART UNIT	PAPER NUMBER
			2161	
			MAIL DATE	DELIVERY MODE
			08/08/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/700,908

**Applicant(s)**

RASPL, STEFAN

**Examiner**

Susan Y. Chen

**Art Unit**

2161

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2007.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-26 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_.

***Response to Amendment***

This office action is in response to the amendment filed on May 18, 2007.

Claims 1-26, are presented for examination.

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-26, are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. publication No. 2002/0052692 issued to FAHY, in view of U.S. Patent No. 6,973,495 issued to Yarmus et al. (hereinafter referred as Yarmus).

Claim 1-10 and 15-26, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. publication No. 2002/0052692 issued to FAHY.

Claim 1:

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FAHY discloses a method of clustering a set of records [Abstract], each of the records having attribute values for a set of attributes [e.g., the unit 200, Fig. 3 and associated texts starting at paragraph 0045 at seq.], the method comprising:

for each attribute of the set of attributes, determining a characteristic value for said each attribute, based on attribute values of said each attribute [e.g., the steps: 210-214, Fig. 3];

wherein determining the characteristic value comprises calculating the attribute values of said attribute across the records[e.g. paragraphs: 0009-0010];

for each attribute value, determining a deviation from the characteristic value of said each attribute, wherein determining the characteristic value comprises calculating the attribute values of said attribute across the records [e.g., the use of K-mean Euclidean distance technique at paragraphs: 0047-0050, Fig. 3 and associated texts];

for each record, sorting the set of attributes based on deviations of the attribute values, to provide a key [e.g., paragraphs: 0064-0065, Units: 224, 226, Fig. 3]; and

clustering the set of records based on the key into a clustering results that includes a plurality of clusters, wherein the key comprises an ordered list of the set of attributes and the deviations [e.g., paragraphs: 0020, 0042-0049 & Fig. 4 and associated text starting at paragraph 0072 at seq.].

Although FAHY clearly disclosed a reduction component that configured to generate a data file of a reduced test matrix from the data file of the test matrix [e.g., paragraph: 0010], he does not specifically disclose the details of refining the clustering result by selectively changing a length of the key to change the number of the clusters.

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However, Yarmus explains the details to refine the clustering result by selectively changing a length of the key to change the number of the clusters [e.g., Abstract, col. 7, lines 49-60, col. 14, line 35 - col. 16, line 7].

FAHY and Yarmus are both of the same endeavor to changing (or reducing) the clustering size of a set of records based on the K-mean clustering (or binning) processing [e.g., FAHY: Fig. 4 and associated texts; Yarmus: col. 7, lines 49-60, col. 14, line 35 - col. 16, line 7], thus, with the teachings of FAHY and Yarmus in front of him/her, it would have been obvious for an ordinary skilled person in the art at the time the invention was made to apply Yarmus's detail explanation of refining the clustering result by selectively changing a length of the key to change the number of the clusters system into FAHY's invention, because by doing so, as suggested by Yarmus, the combined invention is more completed and will provide a useful general business analysis system that requires little user input and statistical skills and still cope with a large space of potential problems whose analytic form is not known in advance [Yarmus: col. 1, lines 31 – lines 59].

Claim 2:

except the limitations recited in claim 1, the combined invention of FAHY and Yarmus further discloses the method comprising calculating a mean value of the attribute values of said each attribute as the characteristic value [e.g., FAHY: paragraph 0052].

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Claims 3:

except the limitations recited in claim 1, the combined invention of FAHY and Yarmus further discloses a median value of the attribute values of each attribute is determined as the characteristic value [e.g., FAHY: paragraphs: 0057 & 0060].

Claims 4:

except the limitations recited in claim 1, the combined invention of FAHY and Yarmus further discloses determining the deviation comprises calculating a difference between each said attribute value and the characteristic value of each said attribute [e.g., FAHY: Abstract, lines 9-16].

Claim 5:

except the limitations recited in claim 1, the combined invention of FAHY and Yarmus further discloses determining the deviation comprises calculating a difference between said each said attribute value and the characteristic value of the corresponding attribute, and dividing the difference by the characteristic value of said each said attribute [e.g., FAHY: the "ration" column of Fig. 8, paragraph 0076].

Claim 6:

except the limitations recited in claim 1, the combined invention of FAHY and Yarmus further discloses sorting the set of attributes comprises using absolute values of

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the deviations of the attribute values as a sorting criterion [e.g., FAHY: paragraph 0026 & 0028].

Claim 7:

except the limitations recited in claim 1, the combined invention of FAHY and Yarmus further discloses that a first record of the set of records contains a first key and a second record of the set of records contains a second key; and further comprising placing the first key and the second key into a single cluster if the first key and the second key have identical sub-sequences of a first length [e.g., FAHY: Fig. 8 and associated texts].

Claim 8:

except the limitations recited in claim 1, the combined invention of FAHY and Yarmus further discloses that first record of the set of records contains a first key and a second record of the set of records contains a second key; and further comprising placing the first key and the second key into a single cluster if the first key and the second key have identical sub-sequences of absolute values of the deviations [e.g., FAHY: Fig. 9 and associated texts].

Claim 9:

except the limitations recited in claim 1, the combined invention of FAHY and Yarmus further discloses that a first record of the set of records contains a first key that

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has a first sub-sequence, and a second record has a second sub-sequence contains a second key; and further comprising placing the first key and the second key into a single cluster if the first and second sub-sequences comprise the same set of attributes [e.g., FAHY: paragraph: the single linkage agglomeration technique at 0059].

Claim 10:

except the limitations recited in claim 9, the combined invention of FAHY and Yarmus further discloses that the first and second sub-sequences comprise the same set of attributes irrespective of a sign of the deviations of the attribute values [e.g., FAHY: paragraph: 0028, Note the absolute value of an attribute is irrespective of a sing].

Claim 11:

except the limitations recited in claim 10, the combined invention of FAHY and Yarmus further discloses that: identifying a cluster having a smallest number of records [e.g., Yarmus: col. 16, line 34 – col. 17, line 6]; and for each record of the identified cluster searching another cluster having records with best matching keys [e.g., Yarmus: col. 14, lines 35-41].

Claim 12:

except the limitations recited in claim 11, the combined invention of FAHY and Yarmus further discloses reducing a length of the first sub-sequence and a length of the

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second sub-sequence in order to find a best match [e.g., FAHY: paragraph 0010, Yarmus: col. 14, line 35 - col. 16, line 7].

Claim 13:

except the limitations recited in claim 11, the combined invention of FAHY and Yarmus further discloses using a distance measure to find another cluster for a record of the identified cluster [e.g., FAHY: Abstract, lines 9-16, Yarmus: Abstract].

Claim 14:

except the limitations recited in claim 11, the combined invention of FAHY and Yarmus further discloses the distance measure comprises a Euclidean distance [e.g., FAHY: 0054].

Claim 15:

This claim incorporates substantially similar subject matter as claim 1 in form of computer program product, hence is rejected along the same rational.

Claim 16:

This claim incorporates substantially similar subject matter as claim 2 in form of computer program product, hence is rejected along the same rational.

Claim 17:

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This claim incorporates substantially similar subject matter as claim 3 in form of computer program product, hence is rejected along the same rational.

**Claim 18:**

This claim incorporates substantially similar subject matter as claim 4 in form of computer program product, hence is rejected along the same rational.

**Claim 19:**

This claim incorporates substantially similar subject matter as claim 5 in form of computer program product, hence is rejected along the same rational.

**Claim 20:**

This claim incorporates substantially similar subject matter as claim 6 in form of computer program product, hence is rejected along the same rational.

As to claims 21-26, these claims recite similar subject matter as claims 1-6 and 15-20 in form of an abstract computer system, hence are rejected along the same rational.

**Response to Arguments**

Applicant's arguments filed on May 18, 2007 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, the Office points out that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Furthermore, during the telephone interview held on July 10, 2007, applicant's attorney (Mr. Fredrik Mollborn) indicated that the instant invention is built upon a well known K-mean clustering algorithms with some improvements, however, the attorney also indicated that he is a new attorney of instant application, hence, he won't able to point out what are the new improvements until he checked with his client, but until now no subsequent response concerning the novelties of instant invention was given to the Office. Moreover, the examiner points out that applicant's fails to defined the metes and bounds of the claimed "characteristic value" in his specification, as such, it is open for reasonable art interpretation. As clearly disclosed by Fahy, the use of K-mean clustering algorithms to analysis a brain gene activity values in the subject rows of a plurality of representing gene arrays via Euclidean similarity distances computations to include or reassign all test subject rows within a pre-specified distance until all test subject rows have been included in a cluster for the brain analysis [e.g., sections: 0042-0049, Fig. 4 and associated texts] are definitely read on the claimed limitations.

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Thereby, based on the discussions of the interview, because applicant does not clearly point out the patentable novelties that he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections. The examiner concludes that the prior art read on the claimed features.

As to the rest of arguments, applicant merely rehashed issues already addressed on record, as such, the 35 U.S.C. 103(a) rejections are maintained.

### **Conclusion**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**Points of Contact**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Y. Chen whose telephone number is 571-272-4016. The examiner can normally be reached on Monday - Friday from 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mofiz Apu can be reached on 571-272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Susan Y Chen  
Examiner  
Art Unit 2161



July 24, 2007